Dalton Transactions 2015 vol.44 N19, pages 8833-8838

Nanoheterogeneous catalysis in electrochemically induced olefin perfluoroalkylation

Dudkina Y., Gryaznova T., Osin Y., Salnikov V., Davydov N., Fedorenko S., Mustafina A., Vicic D., Sinyashin O., Budnikova Y.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© The Royal Society of Chemistry 2015. Ni-catalyzed electroreductive olefin perfluoroalkylation affords both monomeric and dimeric products depending on the reaction media. Recycling of the catalyst can be achieved by immobilization of a (bpy)NiBr2 complex on silica nanoparticles decorated with anchoring amino-groups. Switching the homogeneous and heterogeneous catalysts is found to be one more factor to control the product ratio. This catalytic technique is both green and atom economical and combines the advantages of nanoheterogeneous catalysis and electrocatalysis.

http://dx.doi.org/10.1039/c5dt00269a